DECISION
AND
FINDING OF NO SIGNIFICANT IMPACT
FOR
REDUCING PREDATION LOSSES TO NATIVE BIRDS NESTING ON ISLANDS AND COASTAL AREAS WITH AN INTEGRATED WILDLIFE DAMAGE MANAGEMENT PROGRAM IN THE COMMONWEALTH OF VIRGINIA

The U.S. Department of Agriculture, Animal and Plant Health Inspection Service (USDA-APHIS), Wildlife Services (WS) program responds to requests for assistance from individuals, organizations and agencies experiencing damage caused by wildlife. Ordinarily, according to APHIS procedures implementing the National Environmental Policy Act (NEPA), individual wildlife damage management actions may be categorically excluded (7 CFR 372.5(c), 60 Fed. Reg. 6000-6003 1995). To evaluate and determine if any potentially significant impacts to the human environment from WS' planned and proposed program would occur, an environmental assessment (EA) was prepared. The EA documents the need for predation management to reduce native bird population losses on barrier and Chesapeake Bay islands and coastal areas in the Commonwealth of Virginia and assessed potential impacts of various alternatives for responding to damage problems. WS' proposed action is to implement an Integrated Wildlife Damage Management (IWDM) program on all land classes in the coastal region of Virginia. Comments from the public involvement process were reviewed for substantial issues and alternatives which were considered in developing this decision.

The EA analyzes the potential environmental and social effects for resolving predation management related to the protection of natural resources on private and public lands in the coastal region of Virginia. Virginia has an area of 26,090,880 acres; in Fiscal Year (FY) 2004, Virginia WS had agreements to conduct predator damage management to protect nesting native shorebirds, colonial waterbirds, and black ducks on about 17,623 acres or less than 0.068% of the total land area in Virginia (Management Information System (MIS) 2002).

WS is the Federal program authorized by law to reduce damage caused by wildlife (Act of March 2, 1931, as amended (46 Stat. 1486; 7 U.S.C. 426-426c) and the Rural Development, Agriculture, Related Agencies Appropriations Act of 1988, Public Law 100-102, Dec. 27, 1987. Stat. 1329-1331 (7 U.S.C. 426c), and the Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act of 2001, Public Law 106-387, October 28, 2000. Stat. 1549 (Sec 767). Wildlife damage management is the alleviation of damage or other problems caused by or related to the presence of wildlife and is recognized as an integral part of wildlife management (The Wildlife Society 1992). WS uses an Integrated Wildlife Damage Management (IWDM) approach, commonly known as Integrated Pest Management (WS Directive 2.105) in which a combination of methods may be used or recommended to reduce damage. WS wildlife damage management is not based on punishing offending animals but as one means of reducing damage and is used as part of the WS Decision Model (Slate et al. 1992, USDA 1997, WS Directive 2.201). The imminent threat of damage or loss of resources is often deemed sufficient for wildlife damage management actions to be initiated (U.S. District Court of Utah 1993). Resource management agencies and individuals have requested WS to conduct predator management to protect natural resources in Virginia. All Virginia WS wildlife damage management is in compliance with relevant laws, regulations, policies, orders and procedures, including the Endangered Species Act of 1973.

Virginia WS works and consults with the Virginia Department of Game and Inland Fisheries (VDGIF), and United States Department of Interior (USDI), Fish and Wildlife Service (USFWS) to reduce wildlife damage. The VDGIF has the responsibility to manage all wildlife in Virginia, including federally listed threatened and endangered (T&E) species and migratory birds, which is a joint responsibility with the USFWS. Memoranda of Understanding (MOUs) signed between APHIS-WS and the VDGIF clearly outline the responsibility, technical expertise and coordination between agencies. A Multi-agency Team with representatives and consultants from each of the aforementioned agencies participated to assess the impacts of WS management of predation losses to native bird populations on the barrier and Chesapeake Bay islands and coastal areas of the Commonwealth of Virginia. The VDGIF and USFWS worked with Virginia WS to determine whether the proposed action is in compliance with relevant management plans, laws, regulations, policies, orders, and

procedures.

Consistency

Wildlife damage management conducted in Virginia will be consistent with MOUs and policies of APHIS-WS, the VDGIF and USFWS, and the EA. The agencies may, at times, restrict damage management that concerns public safety or resource values.

Monitoring

The Virginia WS program will annually provide to the VDGIF and USFWS the WS take of target and nontarget animals to help insure the total statewide take (WS and other take) does not impact the viability of target and nontarget species as determined by the VDGIF or USFWS, including raccoon, red fox, opossum, common grackle, American or fish crow, or laughing, herring, or great black-backed gull populations. In addition, the EA will be reviewed each year to ensure that the issues and the analyses are sufficient.

The largest number of raccoons, red fox, and opossums removed by Virginia WS to resolve predation problems on the islands or coastal areas in any year was 326 raccoons in FY2003, 24 red fox in FY2004, and 17 opossums in FY2003 (MIS, unpub. data). No laughing, herring, or great black-backed gulls, American or fish crows, or common grackles have been removed by WS to protect native bird species but gulls have been removed by USFWS to protect native bird species including a federal listed threatened species. There is a potential for an increase in requests for WS assistance with predation management problems to protect nesting birds. Coinciding with this increase in need for assistance is the potential to remove a larger number of raccoons, red fox, opossums, crows, grackles or gulls.

The level of take by WS would vary greatly each year due to funding and the number of and scope of requests for assistance to protect nesting shorebirds, colonial waterbirds, and black ducks nesting on islands and coastal areas of Virginia. As part of WS damage management activities, WS estimates that it will take no more than 500 raccoons, 50 red fox and 50 opossums per year. Raccoon, opossum and red fox populations on coastal, barrier, and Chesapeake Bay islands would be reduced or eliminated. Raccoon, opossum and red fox populations on the mainland would largely be unaffected by these actions and are expected to remain high. Laughing gulls, which are native and were historically present in Virginia, and herring and great black-backed gulls, which neither were historically present to Virginia, would be managed to reduce or eliminate predation to native bird populations. Management actions would not reduce populations of these three gull species in Virginia below the 1984 population levels of 32,000 pairs of laughing gulls in 30 colonies, 3,000 pairs of herring gulls in 20 colonies, and 150 pairs of great black-backed gulls in 10 colonies. Gull management goals, including maintaining gull populations at or above 1984 population levels, were made by the Avian Partnership Council of Virginia and would be expected to provide moderate benefits for threatened and endangered species and nesting birds of management concern. Based upon current nesting population levels in Virginia, WS estimates that it could initially take up to 13,208 adult or juvenile laughing gulls, 1,200 adult or juvenile herring gulls, 1,000 adult or juvenile greater black back gulls, 750 sub-adult laughing gulls, 150 sub-adult herring gulls, and 100 sub-adult greater black back gulls; and other government agencies and individuals could take up to an additional 13,604 adult, sub-adult, or juvenile laughing gulls, 1,870 adult, sub-adult, or juvenile herring gulls, 872 adult, sub-adult, or juvenile greater black back gulls without causing nesting gull populations to drop below 1984 population levels. In addition, WS may take up to 1,000 great black-back gull nests, 1,200 herring gull nests, and 11,866 laughing gull nests. Other government agencies and individuals may take up to 500 great black-back gull nests, 1,501 herring gull nests, and 2,000 laughing gull nests. Management actions would be monitored to assure that gull populations in Virginia would not fall below 1984 population levels. If any population of gulls is reduced to the 1984 level, additional removal efforts would only be undertaken when gull populations exceed the 1984 population levels. As part of WS damage management activities, WS estimates that it will take no more than 100 common grackles and 200 crows per year. Common grackle and crow populations would largely be unaffected by these actions and are expected to remain high.

Criteria for Quantitative Determinations

Quantitative determinations for magnitude of total harvest and WS kill for a species are based on the allowable harvest

level, total harvest, WS kill, and population estimate for the state. Allowable harvest levels are available for eight of the 17 target species analyzed in the EIS (USDA 1997). The use of allowable harvest levels in managing wildlife populations provides for long-term maintenance of animal populations and therefore is appropriate in establishing criteria for determining magnitude.

To quantitatively determine total harvest magnitude for a species, the total harvest is calculated as a percentage of the most current population estimate for the state. If a range of population estimates is reported for a species in a state, the midpoint is used in the analysis. The total harvest percentages for each state are then compared to the allowable harvest level for the species to determine total harvest magnitude. Magnitude ratings are based on the following criteria:

- If the total harvest is less than 75% of the allowable harvest level, the magnitude is considered low.
- If the total harvest is 75-100% of the allowable harvest level, the magnitude is considered moderate.
- If the total harvest is greater than 100% of the allowable harvest level, the magnitude is considered high.

Raccoons

No population estimates were available for raccoons in Virginia. Therefore the best available information was used to estimate minimum statewide population size for raccoons. The state of Virginia is approximately 42,326 square miles (U.S. Census Bureau 1999). Using the assumption that raccoon densities across the state average 50 per square mile, a conservative (minimum) statewide raccoon population could be estimated at approximately 2,116,300 raccoons.

Raccoon populations are stable across the state (R. Farrar, VDGIF, pers. commun.). The number of raccoons killed by landowners and other citizens for depredation purposes is unknown and not measured by any survey. Hunters killed 111,368 raccoons statewide in 2001-2002 season (R. Farrar, VDGIF, pers. commun.) WS lethally removed 171 raccoons in FY 2003 as part of WS damage management programs (e.g., property, protecting T&E species protection), which is only 0.15% of the number of raccoons taken by hunters. WS's lethal management of raccoons would be expected to be no more than approximately 500 animals in any one year under the proposed action, which is only 0.45% of the number of raccoons taken by hunters and therefore would be considered a low magnitude of impact.

As the analysis indicates WS lethal removal of raccoons would be minor compared to sport and other depredation lethal removal allowed by VDGIF. Based on the above information, VDGIF oversight, and WS limited lethal take of raccoons in Virginia, WS should have minimal effects on local or statewide raccoon populations.

Opossums

Opossums use a home range consisting of 4-20 ha. (10-50 acres) in size (Jackson 1994, Seidensticker, et al. 1987). Opossums live for only 1-2 years, with as few as 8% of a population of these animals surviving into the second year in a Virginia study conducted by Seidensticker, et al. (1987). In this 5 year study, it was also observed that there was a wide variation in opossum numbers, in what was considered excellent habitat for the species. These variations were observed seasonally and in different years. However, the mean density during the study was 3.9/km^2 (10.1/ mi^2). This was comparable to other opossum population densities in similar habitats in Virginia.

No population estimates were available for opossums in Virginia. Therefore the best available information was used to estimate minimum statewide population size for opossums. The state of Virginia is approximately 42,326 square miles (U.S. Census Bureau 1999). Using the assumption that opossum densities across the state average 10.1 per sq. mile, a conservative (minimum) statewide opossum population could be estimated at approximately 427,493 opossums.

Opossum populations are stable across the state based on the 2003 Virginia Bowhunter Survey (M. Fies, VDGIF, pers. commun., February 23, 2005). The number of opossums killed by landowners and other citizens for depredation purposes is unknown and not measured by any survey. The number of opossums harvested by hunters is unknown since hunters were not surveyed for opossum harvest. However, fur trappers sold 1,804 opossums during the 2003-2004 fur trapping

season (M. Fies, VDGIF unpub. data). Statewide, WS killed 110 opossums in FY 2003 as part of WS damage management programs (e.g., property, protecting T&E species protection), which is only 6% of the number of opossums sold by fur trappers. WS's lethal management of opossums would be expected to be no more than approximately 50 animals in any one year under the proposed action, which is only 4.6% of the number of opossums sold by fur trappers and therefore would be considered a low magnitude of impact.

As the analysis indicates WS lethal removal of opossums would be minor compared to sport and other depredation lethal removal allowed by VDGIF. Based on the above information, VDGIF oversight, and WS limited lethal take of opossums in Virginia, WS should have minimal effects on local or statewide raccoon populations.

Red fox

The density of red fox populations is difficult to determine because of the animals secretive and elusive nature. Estimates are prone to error even in open prairie areas with good visibility. Methods used to estimate numbers have included aerial surveys, questionnaires to rural residents and mail carriers, scent post surveys, intensive ground searches, and indices derived from hunting and trapping harvest (Voigt 1987). In Great Britain, where food is superabundant in many urban areas, densities as high as 30 foxes / km^2 (78 / mi^2) have been reported (Harris 1977, MacDonald and Newdick 1982, Harris and Rayner 1986), while in southern Ontario, densities of about 1 fox per square kilometer (2.6 / mi^2) occur during spring. In small areas of the best habitat, 3 times as many foxes have been observed (Voigt 1987). However, these densities rarely occur extensively because of the dispersion of unsuitable habitat, high mortality, or the presence of competition such as coyotes (Voigt and Earle 1983). Cyclical changes in fox numbers occur routinely and complicate density estimates as well as management. These cycles can occur because of changes in prey availability, or disease outbreaks among red foxes. For fox populations to remain relatively stable, mortality and reproduction must balance approximately. Home ranges for red foxes in the eastern U. S. are usually from 500 - 2,000 ha. (1,250 – 5,000 acres) in rural settings such as farmland (Voigt and Tinline 1980), but such sizes may not apply among fox populations in urban settings.

No population estimates were available for red foxes in Virginia. Therefore the best available information was used to estimate minimum statewide population size for red fox. There are over 19.8 million acres of rural land in Virginia, with approximately 2.9 million acres considered cropland (U.S. Census Bureau 1999). Using the assumption that 50% of the rural lands throughout the state have sufficient habitat to support red fox, foxes are only found in rural habitat, red fox densities are 1 fox per 250 acres, a conservative statewide red fox population could be estimated at over 39,600 foxes.

Red fox populations are stable across the state (VDGIF unpubl. data). Even though there are few restrictions on depredation harvest and many restrictions on sport harvest, the red fox sport harvest has been approximately stable each year. However, when combined with hunter effort the red fox harvest has decreased since 1993 (R. Farrar, VDGIF, pers. commun.). The number of red fox killed by landowners and other citizens for depredation purposes is unknown and not measured by any survey. Hunters killed 18,692 red fox statewide during the 2001-2002 season (R. Farrar, VDGIF, pers. commun.). WS lethally removed 103 red fox in FY 2003 as part of WS damage management programs (e.g., airports, protecting T&E species, livestock protection), which is only 0.6% of the number of red fox taken by hunters. WS's lethal management of red fox would be expected to be no more than approximately 50 animals in any one year under the proposed action, which is only 0.3% of the number of red fox taken by hunters and therefore would be considered a low magnitude of impact.

Gulls

Members of the Avian Partnership Council established a baseline year of 1984 for managing gull populations in Virginia to reduce predation and nest site competition with native ground nesting colonial waterbirds and shorebirds (M. Erwin, USGS, pers. commun. August 5, 2004). Laughing, herring, and great black-backed gull population levels would not be reduced below the 1984 population level. Also, the Mid-Atlantic New England Maritime Working Group (MANEM) recognized the need to reduce laughing, herring, and greater black back gulls in the Mid-Atlantic Region and for local population management of gulls. The year 1984 allowed populations of historically present laughing gulls and historically absent herring and greater black back gulls and other birds to possibly co-exist, allowed analyses of trend data (Bart et al.

2004), and reduced predation on threatened and endangered birds and birds of special management concern. The Avian Partnership Council consists of state and federal wildlife and natural resource management agencies, environmental and birding organizations, and researchers and academics from colleges in Virginia. MANEM is comprised of state and federal wildlife and natural resource management agencies, environmental and birding organizations, and researchers and academics from the region. Impacts to the population from the proposed program will be measured against the baseline year (Table 1) on an annual basis. The portion of the adult gull breeding population exceeding the baseline year could be subsequently removed. Currently the difference from the baseline year is 936 great black-backed gull pairs, 1,535 herring gull pairs, and 12,936 laughing gull pairs (Table 1).

Colonial waterbirds are surveyed annually on the Virginia barrier islands (Williams et al. 2000), were surveyed in 1993 and 2003 in the entire coastal plain of Virginia (Watts 2004), and are indexed by the Breeding Bird Survey each year (Sauer et al. 2004). The colonial waterbird surveys record only breeding adult gulls and not immature gulls (i.e., herring and great black-backed gulls less than 4 years of age and laughing gulls less than 3 years of age). According to Dolbeer (1998) the number of non-breeding gulls (sub-adults and non-breeding adults) is estimated to equal about 50% of the nesting population.

Under the proposed program, WS and the USFWS would monitor lethal removal of gulls and nests/eggs annually to maintain a breeding gull population in Virginia at or above the 1984 baseline year (Table 1). Gull population would be monitored each year on the barrier islands by The Nature Conservancy; every ten years (e.g,, 1993, 2003) on the coastal plain by the College of William and Mary through funding received from the VDGIF, Virginia Department of Environmental Quality, The Nature Conservancy, and the Center for Conservation Biology. Gull populations on the seaside would be monitored every 5 years (e.g., 1998) which is coordinated by The Nature Conservancy.

Table 1. Estimate of nesting pairs (and number of colonies) of gulls in Virginia.

Species[A]	1977[B]	1984-85[C]	1993[D]	1998	2003[D]	Difference from 1984 (pairs)
GBBG	22 (2)	148 (8)	514 (26)	369*	1,084 (31)	936
HEGU	2,624 (10)	2,986 (18)	8,801 (35)	4,653*	4,521 (38)	1,535
LAGU	31,197 (28)	32,017 (xx)	45,387 (110)	43,784*	44,953 (60)	12,936

A. GBBG = great black-backed gull, HEGU = herring gull, LAGU = laughing gull.
B. Data from Erwin 1979.
C. Data from Andrews 1990.
D. Data from Watts and Byrd. 1998.
*. Barrier islands only.

Population trend data were obtained using Breeding Bird Survey (BBS) data from the U.S. Geological Survey (USGS), Patuxent Wildlife Research Center (Sauer et al. 2004). BBS data represents the best information currently available for monitoring trends in many bird species. In Region 5 of the USFWS, trends calculated from the BBS indicate a rate of increase during the recent period of 1980-2003, with laughing gulls increasing annually at 3.1% (P=0.02). In Region 5 of the USFWS, trends calculated from the BBS indicate a rate of decrease during the recent period of 1980-2003, with great black-backed gulls decreasing annually at 5.2% (P=0.01). In Region 5 of the USFWS, trends calculated from the BBS indicate a stable rate during the recent period of 1980-2003, with herring gulls decreasing annually at 0.4% (P=0.80). The estimated trends for individual states from 1980 to 2003 also show annual increases of 1.0% for laughing gulls and 5.9% for herring gulls in Virginia (Sauer et al. 2004). Watts (2004) showed a 110% increase in great black-backed gulls in Virginia from 1993 – 2003 and a 4,827% increase since 1977 (Erwin 1979 & 1979a). There are too few great black-backed gulls in Virginia for the BBS to calculate trends.

Virginia Christmas Bird Count data from 1966-2003 shows an increasing trend for wintering populations great black-backed gulls, and a relatively stable trend for wintering populations of herring gulls and laughing gulls throughout the state (National Audubon Society 2004).

Gulls are protected by the USFWS under the MBTA. Therefore, gulls are taken in accordance with applicable state and federal laws and regulations authorizing take of migratory birds; and their nest and eggs, including the USFWS and the VDGIF permitting processes. The USFWS, as the agency with migratory bird management responsibility, could impose restrictions on depredation harvest as needed to assure cumulative take does not adversely affect the continued viability of populations. This should assure that cumulative impacts on great black-backed gull, herring gull, and laughing gull populations would have no significant adverse impact on the quality of the human environment. In 2003 the USFWS authorized the take of 375 great black-backed gulls in Virginia, while 23 birds were reported taken by permits; 2,905 herring gulls in Virginia, while 333 birds were reported taken by permits; 3,135 laughing gulls in Virginia, while 626 birds were reported taken by permits; (L. Gore, USFWS, pers. commun. March 1, 2005). In calendar year 2003, statewide, WS lethally removed 6 great black-backed gulls, 125 herring gulls, and 241 laughing gulls to protect aviation safety, human safety, and property in VA. No nests or eggs were destroyed. No gulls were taken by WS to protect natural resources in 2003 or 2004. The USFWS in VA lethally removed 19 great black-backed gulls, 86 herring gulls, 171 laughing gulls, and 5 ring-billed gulls in 2003 to protect piping plovers, a federally listed threatened species. Lethal removal by WS and USFWS included adult and sub-adult gulls. Lethal removal by WS may have included birds wintering in Virginia from other states. Analysis of this level of take indicates breeding populations of all three species of gulls are still above the 1984 baseline year (Table 1).

Based on the above information, USFWS oversight, and WS limited lethal take of gulls in Virginia, WS should not adversely affect local, statewide, regional or continental great black-backed, herring, and laughing gull populations.

Common Grackles

Common grackles are considered to be part of the blackbird species group described in USDA (1997) and are estimated to represent 22% of this group (Meanley and Royall 1976). Precise counts of blackbird populations do not exist, but one estimate placed the United States summer population of the blackbird group at over 1 billion (USDA 1997) and the winter population at 500 million (Royall 1977). Natural mortality in blackbird populations is between 50% and 65% of the population each year, regardless of human-caused control operations (USDA 1997). The annual population of blackbirds in the eastern U.S. is at least 232 million (Meanley and Royall 1976, Johnson and Glahn 1994). Therefore the estimated natural mortality of the blackbird group in the eastern U.S should be between 116 and 140 million birds annually.

Dolbeer et al. (1995) showed that WS kills of 3.6% of the wintering population had no effect on breeding populations the following spring. Dolbeer et al. (1976) constructed a population model which indicated that a reduction of 14.8% of the wintering blackbird population would reduce the spring breeding population by 20% and that a 56.2% reduction in the wintering blackbird population would reduce spring breeding populations by only 33%. Given the density-dependent relationships in a blackbird population (i.e. decreased mortality and increased fecundity of surviving birds) a much higher number would likely have to be killed in order to impact the regional breeding population.

The USFWS has established a Depredation Order (50 CFR 21.43) for blackbirds, whereby no Federal permit is required to remove blackbirds if they are committing or about to commit depredations upon ornamental or shade trees, agricultural crops, livestock, or wildlife, or when concentrated in such numbers and manner as to constitute a health hazard or other nuisance. The USFWS, as the agency with management responsibility, could impose restrictions on depredation harvest as needed to assure cumulative take does not adversely affect the continued viability of populations. This should assure that cumulative impacts on blackbird populations would have no significant adverse impact on the quality of the human environment.

Breeding Bird Survey trend data from 1966-2003 indicate that common grackle populations have decreased at an annual rate of -1.9%, -1.3%, and -2.0% throughout Virginia, the United States, and Region 5 of the USFWS, respectively (Sauer et al. 2004). With a relative abundance of 76.40, a total Virginia summer grackle population could be estimated at approximately 323,370 birds. Virginia Christmas Bird Count data from 1966-2003 shows a relatively stable population trend for wintering populations of grackles throughout the state (National Audubon Society 2004).

The number of common grackles killed by farmers and other citizens is unknown and not measured by any survey.

Statewide, WS killed 17 grackles in FY 2003 to alleviate damage. WS's lethal management of common grackles would be expected to be no more than approximately 100 birds in any one year under the Proposed Action. In addition WS may remove up to 50 grackle nests/eggs on an annual basis.

Based on the above information, USFWS oversight, and WS anticipated lethal take of common grackles in Virginia, WS should have minimal effects on local, statewide, regional or continental populations.

American and Fish Crows

VDGIF provided hunter harvest data (Table 2), but was unable to provide any definitive estimates of population sizes for purposes of the following analyses on impacts to American or fish crow populations. Therefore, WS used the best available information to produce reasonable estimates. American and fish crow populations in Virginia are considered increasing based on trends in breeding bird surveys according to the USGS, Patuxent Wildlife Research Center (Sauer et al. 2004). VDGIF, the state authority responsible for monitoring and managing crows in Virginia believes crows are increasing and are an under-utilized resource by legal hunters (B. Ellis, VDGIF, pers. commun.). Breeding Bird Survey trend data from 1966-2003 indicate that American crow populations have increased at an annual rate of 0.9%, 1.3%, and 1.2% throughout Virginia, the United States, and Region 5 of the USFWS, respectively (Sauer et al. 2004). With a relative abundance of 57.02, a total Virginia summer American crow population could be estimated at approximately 241,343 birds. Breeding Bird Survey trend data from 1966-2003 indicate that fish crow populations have increased at an annual rate of 3.9%, 1.1%, and 3.2% throughout Virginia, the United States, and Region 5 of the USFWS, respectively (Sauer et al. 2004). With a relative abundance of 1.08, a total Virginia summer fish crow population could be estimated at approximately 4,571 birds. Also, the breeding bird survey reported Virginia had the highest relative abundance of American crows among all 50 states (Sauer et al. 2004).

Virginia Christmas Bird Count data from 1966-2003 shows a relatively stable trend for wintering populations of American crows and fish crows throughout the state (National Audubon Society 2004).

Table 2. The estimated number of crows legally killed by hunters during regulated hunting seasons in Virginia. The Virginia Department of Game and Inland Fisheries measures hunter harvest through surveys.

Year	Hunter harvest
1993 - 1994	201,549
1994 - 1995	321,133
1995 - 1996	291,277
1996 - 1997	203,961
1997 - 1998	285,513
1998 - 1999	258,422
2001 – 2002	251,167

The USFWS has established a Depredation Order (50 CFR 21.43) for crows, whereby no Federal permit is required to remove crows if they are committing or about to commit depredations upon ornamental or shade trees, agricultural crops, livestock, or wildlife, or when concentrated in such numbers and manner as to constitute a health hazard or other nuisance. The USFWS, as the agency with management responsibility, could impose restrictions on depredation harvest as needed to assure cumulative take does not adversely affect the continued viability of populations. This should assure that cumulative impacts on crow populations would have no significant adverse impact on the quality of the human environment.

The number of crows killed by farmers and other citizens is unknown and not measured by any survey. The mean number of crows harvested by hunters from 1993 - 1999 was 260,309 birds (Table 2). Statewide, WS killed 480 crows in FY 2003 to alleviate damage, which is only 0.18% of the number of crows harvested by hunters. WS's lethal management of crows would be expected to be no more than approximately 200 birds in any one year under the proposed action, which is only 0.08% of the number of crows taken by hunters and therefore would be considered a low magnitude of impact.

Since WS has no authority or control over sport or other harvest or mortality of crows in the state, the *status quo* for crow populations and human-caused crow mortality in Virginia is almost the same with or without the involvement of the federal program. This is further suggested by the likelihood that some of the crows killed by WS would be killed by resource owners and land mangers anyway since they were depredating animals. As the analysis indicates WS lethal removal of crows would be minor compared to sport and other depredation take.

Based on the above information, USFWS oversight, and WS anticipated lethal take of crows in Virginia, WS should have minimal effects on local, statewide, regional or continental populations.

Public Involvement

Issues related to the proposed action were initially developed by an interdisciplinary team involving the VDGIF and USFWS. This Multi-agency team refined the issues and identified preliminary alternatives. An invitation for public comment letter on the pre-decisional EA was sent to 64 individuals or organizations identified as interested in Virginia WS or VDGIF projects. Notice of the proposed action and invitation for public involvement on the pre-decisional EA was placed in two newspapers (Richmond Times-Dispatch and The Virginia Pilot) with circulation in the capital region and eastern Virginia. There was a 32-day comment period for the public to provide input on the pre-decisional EA. One comment letter was received from the public after review of the pre-decisional EA. All comments were analyzed to identify substantial new issues, alternatives, or to redirect the program. Responses to public comments were summarized in Appendix D of the Final Environmental Assessment, October 2005. All letters and responses are maintained in the administrative file located at the Virginia WS State Office, P.O. Box 130, Moseley, Virginia 23120.

Major Issues

The EA describes the alternatives considered and evaluated using the identified issues. The following issues were identified as important to the scope of the analysis (40 CFR 1508.25).

- Effects on target species populations of raccoon, opossum, red fox, gull, common grackle and crow
- Effects of predation on protected resources- native bird species
- Effects of control methods on nontarget wildlife species populations, including T&E species
- Effects of control methods on human health and safety
- Effects on aesthetic values of target species and protected resources
- Effects on recreation
- Effects on economics
- Humaneness and animal welfare concerns of control methods used

Affected Environment

The areas of the proposed action include barrier and Chesapeake Bay islands or coastal areas where mammalian or avian predators could prey on threatened or endangered native birds or bird species of management concern. The proposed action could also include private and public property.

Alternatives That Were Fully Evaluated

The following Alternatives were developed by the Multi-agency Team to respond to the issues. A detailed discussion of the effects of the Alternatives on the issues is described in the EA; below is a summary of the Alternatives.

- Alternative 1 - **Integrated Wildlife Damage Management/ Predator Management Program (Proposed Action/No Action)**

  The proposed action is for the WS program in the Commonwealth of Virginia to continue the current Integrated Wildlife Damage Management (IWDM) program that responds to requests for PM to protect and restore native

bird populations on the coastal, barrier, and Chesapeake Bay islands of Virginia. An IWDM approach, including Technical Assistance and Direct Control Assistance, would be implemented which would allow use of any legal technique or method, used singly or in combination, to meet requestor needs for resolving conflicts with raccoons, red fox, opossum, gulls, grackles, and crows. Cooperators requesting assistance would be provided with information regarding the use of practical and effective nonlethal and lethal techniques. WS would respond to requests for assistance by 1) providing technical assistance and advice to resource owners and land managers on actions they could take to reduce damages caused by predators, and/or 2) conducting direct operational control actions for the resource owner or land manager (see Table 14 in EA).

Actions implemented by resource owner or land manager

Resource owners and land managers requesting WS assistance would be provided with information regarding the use of effective and practical nonlethal and lethal techniques. Resource owners and land managers may choose to implement WS recommendations on their own, use contractual services of private businesses, use volunteer services of private organizations, use contractual services of Wildlife Services or take no action. Implementation of nonlethal methods such as habitat alteration, husbandry practices, harassment, scare devices, and mechanical repellents is usually the responsibility of the resource owner or land manager.

Migratory Bird Permits - Resource owners and land managers may choose to apply for a migratory bird depredation permit from the USFWS to lethally remove gulls and their eggs, as required by the implementing regulations of the Migratory Bird Treaty Act (MBTA) for depredation control (50 CFR 21.41). No USFWS permit is required to non-lethally harass migratory bird species or to destroy nests that do not have eggs. No USFWS migratory bird permit (50 CFR 21.43) or Virginia state issued permit is required to take crows or grackles, or their eggs to protect native bird species. In most circumstances, the USFWS requires nonlethal methods be used and shown ineffective or impractical before the USFWS will issue a migratory bird depredation permit to take gulls and their eggs. In this situation, WS would evaluate the damage and complete a Migratory Bird Damage Report (WS Form 37) which would include information on the extent of the damages, the number of gulls present, and a recommendation for the number of gulls or gull eggs that should be taken to best alleviate the damages. Following USFWS review of a complete application for a depredation permit, including a Migratory Bird Damage Report, from a resource owner or land manager, a depredation permit could be issued by the USFWS to authorize the lethal removal of a specified number of gulls or a specified number of eggs as part of an IWDM approach to reduce gull depredation on native bird species. Upon receipt of a depredation permit, the resource owner or land manager, or appropriate sub-permittee may commence the authorized activities. As a condition of the permit, the permit holder must submit a written report of their activities upon expiration of the permit to the USFWS. Permits may be renewed by the USFWS annually as needed to resolve damages. Resource owners or land managers could conduct PM using any method authorized on their permit, including shooting, egg oiling or destruction, Avitrol, or any other methods that are legal. Not all of the methods listed in Appendix B of the EA as potentially available to WS would be legally available for use by resource owners or land managers.

Mammal permits - The resource owner or land manager may choose to apply for their own kill permit from the VDGIF to lethally remove raccoons by trapping or shooting. A landowner will need to apply for a VDGIF permit to trap or shoot opossums only if he/she hires an agent to conduct lethal management activities. Otherwise, the landowner may kill opossums himself/herself without a permit. Landowners may have red foxes killed on their property at any time by anyone without a VDGIF issued permit.

Actions implemented by Wildlife Services

PM control activities by WS would be provided in Virginia, when requested, on private property or public facilities and lands where a need has been documented and upon completion of an *Agreement for Control* between WS and the property owner or manager. WS uses an IWDM approach where nonlethal or lethal methods are applied sequentially or simultaneously, depending on the target species and which methods are practical and effective. Lethal methods used by WS would include shooting; live capture (traps, snares, nets, etc.) followed by

euthanasia; denning; effigies; M-44's; gas cartridges; DRC-1339; and Avitrol. Nonlethal methods used by WS may include habitat alteration; exclusion such as wire barriers and fences; deterrents; harassment; effigies; other scaring devices; lasers; and Measurol. All management activities, including disposal requirements, would comply with appropriate Federal, State, and Local laws.

Migratory Bird Permits - To address the anticipated needs of all resource owners and land managers with gull damage issues in the coastal areas of Virginia, WS would submit an application for a one-year migratory bird depredation permit to the USFWS estimating the maximum number of gulls and their eggs of each species to be taken by WS as part of an IWDM approach to reduce gull predation on native bird species. No USFWS permit is required to non-lethally harass migratory bird species or to destroy nests that do not have eggs. No USFWS migratory bird permit (50 CFR 21.43) or Virginia state issued permit is required to take crows or grackles, or their eggs to protect native bird species. The USFWS would conduct an independent review of the application, and if acceptable, issue a migratory bird permit to WS as allowed under the depredation permit regulations to take gulls and their eggs. As appropriate, WS could request an amendment of their permit to increase the number of gulls or eggs that would need to be removed to address unpredicted and emerging gull damages/conflicts. Each year, WS would submit an application for renewal of their permit to the USFWS. Through the use of Adaptive Management principles, Virginia breeding gull population management objectives, management actions in the previous year, and anticipated damages and conflicts in the next year, WS would adjust numbers of gulls to meet anticipated needs to resolve gull predation on native bird species. The USFWS would review this application annually, and as appropriate, would issue migratory bird permits to WS as allowed by MBTA regulations. All alterations in the number of gulls or eggs to be removed by WS will be reviewed against the impacts analyzed in this EA.

Mammal permits - Federal wildlife agencies and local government agencies are exempt from VDGIF permit requirements to lethally take state regulated wildlife species in Virginia (VAC 10-30-50).

Alternative 2 - **Nonlethal PM Only By WS** - Under this alternative, only nonlethal direct control activities and technical assistance would be provided by WS to resolve predator damage on native bird species (see Table 14 in EA).

Actions implemented by resource owner or property manager

Resource owners and land managers requesting assistance from WS would be provided only with information regarding the use of effective and practical nonlethal methods. The nonlethal methods recommended by WS would follow those identified in Alternative 1. Resource owners and land managers may choose to implement WS' nonlethal recommendations on their own, implement lethal methods or other methods not recommended by WS, use contractual services of private businesses, use volunteer services of private organizations, use nonlethal contractual services of WS, or take no action. In situations where nonlethal methods were impractical or ineffective to alleviate damages, WS would refer requests for information regarding lethal information to VDGIF, USFWS, local animal control agencies, or private businesses or organizations. Not all of the methods listed in Appendix B of the EA as potentially available to WS would be legally available for use by resource owners or land managers.

Resource owners and land managers frustrated by lack of WS assistance with the full range of PM techniques (including the use of lethal methods) may try methods not recommended by WS (e.g., illegal poisons, not follow EPA regulations on pesticide labels). In some cases, resource owners or land managers may misuse some methods or use some methods in excess of what is necessary (USDA 1997, White et al. 1989, USFWS 2001, USFDA 2003)

Migratory Bird Permits - Under this alternative, resource owners and land managers may be limited to using nonlethal methods only on gulls as they may be unable to obtain the necessary USFWS permits for use of lethal methods. The USFWS requires professional wildlife damage recommendations on individual damage situations

before they issue a migratory bird depredation permit to take gulls and their eggs. The USFWS does not have the mandate or resources available to conduct wildlife damage management work. State agencies (i.e., VDGIF) with responsibilities for migratory birds would likely have to provide this information to the USFWS if migratory bird depredation permits are to be issued for gulls under this alternative. If the appropriate information were provided to the USFWS, following the agency's review of a complete application package for a depredation permit from a property owner or manager to lethally remove gulls or their eggs, the USFWS could issue a migratory bird permit to protect native bird species from gull predation. The USFWS migratory bird permit issuance procedures would follow those described in Alternative 1 (under property owner or manager). Resource owners or land managers could conduct PM using any method authorized by the USFWS, including shooting, egg oiling or destruction, Avitrol or any other methods that are legal. Not all of the methods listed in Appendix B of the EA as potentially available to WS would be legally available for use by resource owners or land managers. If state agencies, businesses, and organizations request removal of gulls and their eggs in greater numbers than are necessary, as they may have less technical knowledge and experience managing wildlife damage than WS, the USFWS may subsequently authorize more take than is necessary to alleviate gull damages and conflicts.

Mammal permits - The resource owner or land manager may choose to apply for their own kill permit from the VDGIF to lethally remove raccoons by trapping or shooting. A landowner will need to apply for a VDGIF permit to trap or shoot opossums only if he/she hires an agent to conduct lethal management activities. Otherwise, the landowner may kill opossums himself/herself without a permit. Landowners may have red foxes killed on their property at any time by anyone without a VDGIF issued permit.

Actions implemented by Wildlife Services

PM assistance would be provided by WS in Virginia, when requested, on private or public facilities and lands where a need has been documented and upon completion of an *Agreement for Control* between WS and the property owner or manager. This assistance would be limited to nonlethal methods. The nonlethal methods used or recommended by WS would be identical to those identified in Alternative 1. WS would not need to apply for a depredation permit from the USFWS because no lethal methods would be used. No permits are required from the USFWS or VDGIF to implement nonlethal PM methods.

Alternative 3 - **Technical Assistance Only** - This alternative would be limited to technical assistance only from WS and would not allow for WS operational PM to protect native birds from predation on coastal areas in Virginia (see Table 14 in EA).

Actions implemented by resource owners and land managers

Resource owners and land managers requesting technical assistance from WS would receive information regarding the use of effective and practical nonlethal and lethal methods. The nonlethal and lethal methods recommended by WS would be identical to those identified in Alternative 1 (Actions implemented by resource owner or land manager). Resource owners and land managers may choose to implement WS' recommendations, use contractual services of private businesses, use volunteer services of private organizations, or take no action. In situations where nonlethal methods are ineffective or impractical, WS would be able to advise the resource owner or property manager of appropriate lethal methods to supplement nonlethal methods.

Resource owners and land managers frustrated by their inability to alleviate damages to acceptable levels may try methods not recommended by WS (e.g., illegal poisons, not follow EPA regulations on pesticide labels). In some cases, resource owners or land managers may misuse some methods or use some methods in excess of what is necessary (USDA 1997, White et al. 1989, USFWS 2001, USFDA 2003).

Resource owner and land managers permitted take of migratory birds and mammals protected by state law would be the same as described under Alternative 1 (Actions implemented by resource owner or land manager)

Actions implemented by Wildlife Services

WS would only provide technical assistance and assist resource owners and land managers with Migratory Bird Depredation Reports required by the USFWS for issuance of migratory bird permits to manage predation associated with gulls. WS would not provide any operational assistance under this alternative.

- Alternative 4 – - **Lethal PM Only By WS** - Under this alternative, only lethal technical assistance and operational control services would be provided by WS to protect native birds from predation on coastal areas in Virginia (see Table 14 in EA).

Actions implemented by resource owners and land managers

Resource owners and land managers requesting assistance from WS would only be provided with information regarding effective and practical lethal methods. Lethal methods recommended by WS would be identical to those identified in Alternative 1 (Actions implemented by resource owner or land manager). WS would refer requests for information regarding nonlethal methods to VDGIF, USFWS, local animal control agencies, or private businesses or organizations. Resource owners and land managers may choose to implement WS lethal recommendations, implement nonlethal methods or other methods not recommended by WS, use contractual services of private businesses, use volunteer services of private organizations, use lethal contractual services of WS or take no action. In situations where nonlethal methods were impractical or ineffective, WS would be available to provide recommendation for effective and practical lethal methods.

Resource owner and land manager permitted take of migratory birds and mammals protected by state law would be the same as described under Alternative 1 (Actions implemented by resource owner or land manager).

Actions implemented by Wildlife Services

PM assistance would be provided by WS in Virginia, when requested, on private or public facilities and lands where a need has been documented and upon completion of an *Agreement for Control* between WS and the property owner or land manager. This assistance would be limited to lethal methods. The lethal methods used or recommended by WS would be identical to those identified in Alternative 1.

Wildlife Services permitted take of migratory birds and mammals protected by state law would be the same as described under Alternative 1 (Actions implemented by Wildlife Services).

- Alternative 5 - **No Federal WS PM** - This alternative would eliminate WS involvement in PM to protect native birds from predation on coastal areas in Virginia (see Table 14 in EA). WS would not provide direct operational or technical assistance.

Actions implemented by resource owners and land managers

Resource owners and land managers would have to conduct PM without WS involvement. WS would refer all requests for PM assistance to VDGIF, USFWS, local animal control agencies, or private businesses or organizations. Nonlethal and lethal methods that could be potentially used would be identical to those identified in Alternative 1 (Actions implemented by resource owner or land manager). Resource owners and land managers may choose to implement any lethal or nonlethal method available to them, use contractual services of private businesses, use volunteer services of private organizations, or take no action. In situations where PM methods are ineffective or impractical, WS would not be able to advise the resource owner or property manager of appropriate PM methods to use to resolve the specific conflict.

Resource owners and land managers frustrated by lack of WS assistance may try methods that are inappropriate

(e.g., illegal poisons, not follow EPA regulations on pesticide labels). In some cases, resource owners or land managers may misuse some methods or use some methods in excess of what is necessary (USDA 1997, White et al. 1989, USFWS 2001, USFDA 2003).

Resource owner and land manager permitted take of migratory birds and mammals protected by state law would be the same as described under Alternative 2 (Actions implemented by resource owner or land manager).

Actions implemented by Wildlife Services

Wildlife Services would not provide any PM assistance under this alternative.

Finding of No Significant Impact

The analyses in the EA demonstrate that Alternative 1 (*Integrated Wildlife Damage Management / Predator Management Program* (Proposed Action/No Action): 1) best addresses the issues identified in the EA, 2) provides safeguards for public health and safety, 3) provides WS the best opportunity to reduce damage while providing low impacts on target and nontarget species, 4) balances the economic effects to natural resources and business, and 5) allows WS to meet its obligations to the VDGIF, USFWS, and other agencies or entities.

The analysis in the EA indicates that there will not be a significant impact, individually or cumulatively, on the quality of the human environment as a result of this proposed action. I agree with this conclusion and therefore find that an EIS need not be prepared. This determination is based on the following factors:

1. Management or predation losses to protect natural resources, as conducted by WS in Virginia, is not regional or national in scope.

2. The proposed action would pose minimal risk to public health and safety. Risks to the public from WS methods were determined to be low in a formal risk assessment (USDA 1997, Appendix P).

3. There are no unique characteristics such as park lands, prime farm lands, wetlands, wild and scenic areas, or ecologically critical areas that would be significantly affected. Built-in mitigation measures that are part of WS's standard operating procedures and adherence to laws and regulations will further ensure that WS activities do not harm the environment.

4. The effects on the quality of the human environment are not highly controversial. Although there is some opposition to wildlife damage management, this action is not highly controversial in terms of size, nature, or effect.

5. Based on the analysis documented in the EA and the accompanying administrative file, the effects of the proposed damage management program on the human environment would not be significant. The effects of the proposed activities are not highly uncertain and do not involve unique or unknown risks.

6. The proposed action would not establish a precedent for any future action with significant effects.

7. No significant cumulative effects were identified through this assessment. The number of raccoons, red fox, opossums, crows, grackles, laughing gulls, herring gulls, and greater black backed gulls taken by WS, when added to the total known take, falls within a low magnitude of take or would not adversely affect target species populations. The EA discussed cumulative effects of WS on target and non-target species populations and concluded that such impacts were not significant for this or other anticipated actions to be implemented or planned within the State.

8. The proposed activities would not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, nor would they likely cause any loss or destruction of

significant scientific, cultural, or historical resources.

9. WS determined that the proposed predation damage management program would have no adverse affect on listed birds, mammals, invertebrates, plants, reptiles, amphibians, fish, or plants or their critical habitats in Virginia. An informal Section 7 consultation with the USFWS (Letter from K. Mayne, USFWS, to M. Lowney, WS, March 11, 2005) confirmed that the proposed action would not likely adversely affect any federally listed or proposed T&E species or their designated critical habitat.

10. The proposed action would be in compliance with all federal, state, and local laws imposed for the protection of the environment.

Decision and Rationale

I have carefully reviewed the EA and the input from the public involvement process. I believe that the issues identified in the EA are best addressed by selecting Alternative 1 (*Integrated Wildlife Damage Management / Predator Management Program* (Proposed Action) in the EA and applying the associated mitigation and monitoring measures discussed in Chapter 3 of the EA. Alternative 1 would provide the greatest effectiveness and selectivity of methods available, the best cost-effectiveness, and has the potential to even further reduce the current low level of risk to the public. WS will continue to use currently authorized wildlife damage management methods in compliance with all the applicable mitigation measures listed in Chapter 3 of the EA. Comments identified from public involvement were minor and did not change the analysis. Therefore, it is my decision to implement the proposed action alternative as described in the EA.

For additional information regarding this decision, please contact Martin Lowney, APHIS-WS, P. O. Box 130, Moseley, Virginia 23120, telephone (804) 739-7739.

Charles S. Brown, Regional Director
APHIS-WS Eastern Region

12/6/05
Date

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